Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1. (Currently amended) A method for forming a deep trench capacitor buried plate comprising:

providing a substrate having a pad oxide layer and a pad nitride layer thereon, the pad oxide layer and the pad nitride layer having at least an opening;

performing a dry etching process for forming a deep trench in the substrate via the opening;

depositing a doped silicate glass film on an inner wall of the deep trench;

filling a sacrificial layer into the deep trench;

etching back the sacrificial layer for exposing parts of the doped silicate glass film;

removing the exposed doped silicate glass film;

removing the remaining sacrificial layer;

depositing a silicon nitride layer on the inner wall of the deep trench;

performing a thermal process for forming a doped region at a bottom of the trench <u>after the remaining sacrificial layer is removed</u>;

removing the silicon nitride layer; and

removing the doped silicate glass film;

wherein the silicon nitride layer serves as a barrier layer for preventing ions of the doped silicate glass film from diffusing into a collar region of the deep trench.

2. (Original) The method of claim 1 wherein the doped silicate glass film is an arsenic silicate glass (ASG) film.

3. (Original) The method of claim 2 wherein the arsenic silicate glass film is formed by a chemical vapor deposition (CVD) process.

4. (Original) The method of claim 1 wherein the silicon nitride layer is formed by a chemical vapor deposition process.

5. (Original) The method of claim 1 wherein the doped silicate glass film is removed by an anisotropic etching process.

6. (Original) The method of claim 1 wherein the silicon nitride layer is removed by an anisotropic etching process.

7. (Currently amended) A method for forming a deep trench capacitor buried plate comprising:

providing a substrate having a pad oxide layer and a pad nitride layer thereon, the pad oxide layer and the pad nitride layer having at least an opening;

performing a dry etching process for forming a deep trench in the substrate via the opening;

depositing a doped silicate glass film on an inner wall of the deep trench;

filling a sacrificial layer into the deep trench;

removing a portion of the sacrificial layer for exposing parts of the doped silicate glass film;

performing an etching process to remove the exposed doped silicate glass film and a portion of the pad oxide layer for forming a recess;

removing the remaining sacrificial layer;

depositing a silicon nitride layer on the inner wall of the deep trench and filling up the recess with the silicon nitride layer;

performing a diffusing process for forming a doped region at a bottom of the trench;

removing the silicon nitride layer; and

removing the doped silicate glass film;

wherein the silicon nitride layer serves as a barrier layer for preventing ions of the doped silicate glass film from diffusing into a collar region of the deep trench.

8. (Original) The method of claim 7 wherein the doped silicate glass film is an arsenic silicate glass (ASG) film.

9. (Original) The method of claim 8 wherein the arsenic silicate glass film is formed by a chemical vapor deposition (CVD) process.

10. (Original) The method of claim 7 wherein the silicon nitride layer is formed by a chemical vapor deposition process.

11. (Original) The method of claim 7 wherein the etching process is an anisotropic etching process.

12. (Original) The method of claim 7 wherein the silicon nitride layer is removed by an anisotropic etching process.

13. (Currently amended) A method for forming a deep trench capacitor buried plate comprising:

providing a substrate having a pad oxide layer and a pad nitride layer thereon, the pad oxide layer and the pad nitride layer having at least an opening;

performing an etching process for forming a deep trench in the substrate via the opening;

depositing a doped silicate glass film on an inner wall of the deep trench;

filling a sacrificial layer into the deep trench;

etching back the sacrificial layer for exposing parts of the doped silicate glass film;

removing the exposed doped silicate glass film<u> and forming a collar region in the</u>

inner wall of the deep trench;

removing the remaining sacrificial layer;

depositing a silicon nitride layer on the surface of the collar region in the inner wall of the deep trench and on the surface of the remaining silicate glass film after removing the remaining sacrificial layer;

performing a thermal process for forming a doped region at a bottom of the trench;

removing the silicon nitride layer; and

removing the doped silicate glass film.

14. (Currently amended) The method of claim ~~1~~13 wherein the doped silicate glass film is an arsenic silicate glass (ASG) film.

15. (Previously presented) The method of claim 14 wherein the arsenic silicate glass film is formed by a chemical vapor deposition (CVD) process.

16. (Previously presented) The method of claim 13 wherein the silicon nitride layer is formed by a chemical vapor deposition process.

17. (Previously presented) The method of claim 13 wherein the doped silicate glass film is removed by an anisotropic etching process.

18. (Currently amended) The method of claim ~~1~~13 wherein the silicon nitride layer is removed by an anisotropic etching process.

19. (Currently amended) The method of claim ~~1~~13 wherein the silicon nitride layer serves as a barrier layer for preventing ions of the doped silicate glass film from diffusing into a collar region of the deep trench.